



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh Street S.W.
Washington, D.C. 20590

**IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0464/S, REVISION 1**

This certifies that the source described has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency¹ and the United States of America² for the transport of radioactive materials.

1. Source Identification - J.L. Shepherd & Associates Model 6810-190
2. Source Description - The source described by this certificate has an outer encapsulation made of 304 stainless steel and sealed by heli-arc weld. The outside dimensions are 41.9 mm (1.65") in diameter by 386.1 mm (15.78") in length, with a wall thickness of 0.82 mm (.032"), as shown in J.L. Shepherd drawing no. A-0068-190-10. Two inner encapsulations, both doubly encapsulated, are made of 316 stainless steel and sealed by heli-arc weld. The outside dimensions are 39.4 mm (1.55") in diameter by 47.0 mm (1.85") long, as shown in J.L. Shepherd drawing no. A-0068-190. An aluminum alloy spacer bar, 274.3 mm (10.8") long, holds the sources near the ends of the outermost capsule. All source capsules shall be heli-arc welded and manufactured in accordance with the above referenced J.L. shepherd drawings.
3. Radioactive Contents - This source consists of not more than 166.5 TBq (4,500 Ci) of cesium-137 in the form of cesium chloride pellets.
4. Quality Assurance - Records of Quality Assurance activities required by Paragraph 209 of the IAEA regulations¹ shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.
5. Expiration Date - This certificate expires June 30, 2003.

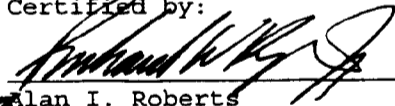
¹ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 Edition, as amended 1990," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

CERTIFICATE USA/0464/S, REVISION 1

This certificate is issued in accordance with paragraph 703 of the IAEA Regulations and section 173.476 of Title 49 of the Code of Federal Regulations, in response to the petition and information dated October 8, 1992 and March 25, 1998 submitted by J.L. Shepherd and Associates, San Fernando, CA, and in consideration of other information on file in this office.

Certified by:



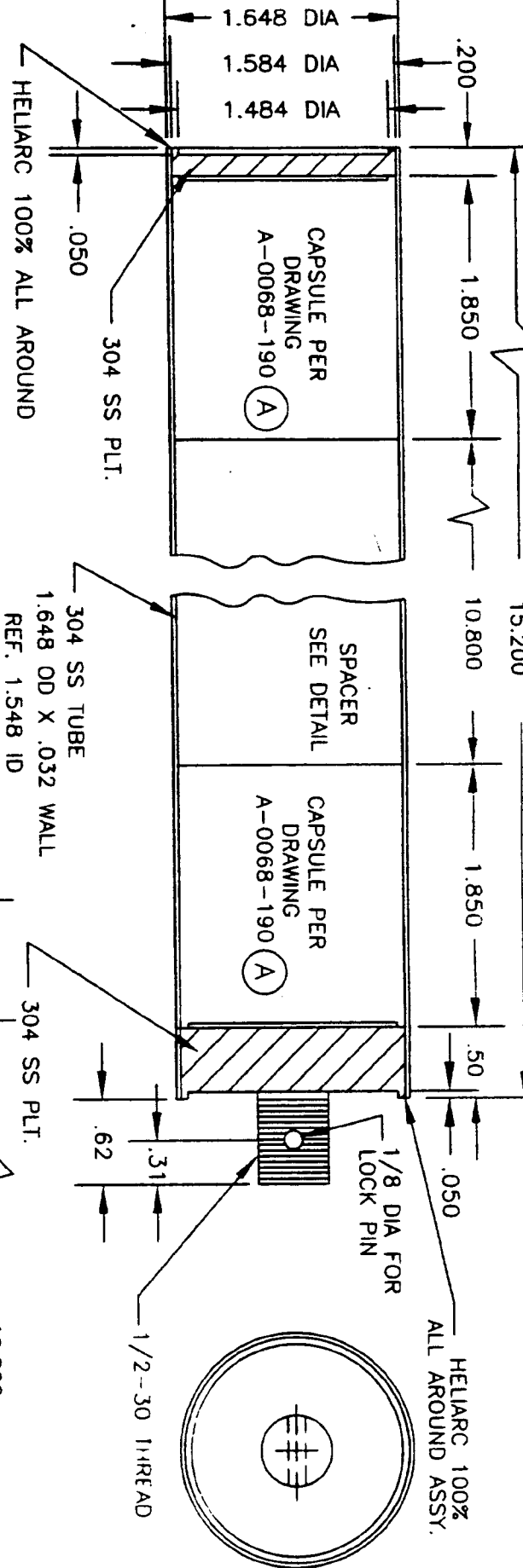
Alan I. Roberts

Associate Administrator for Hazardous Materials Safety

SEP - 3 1998

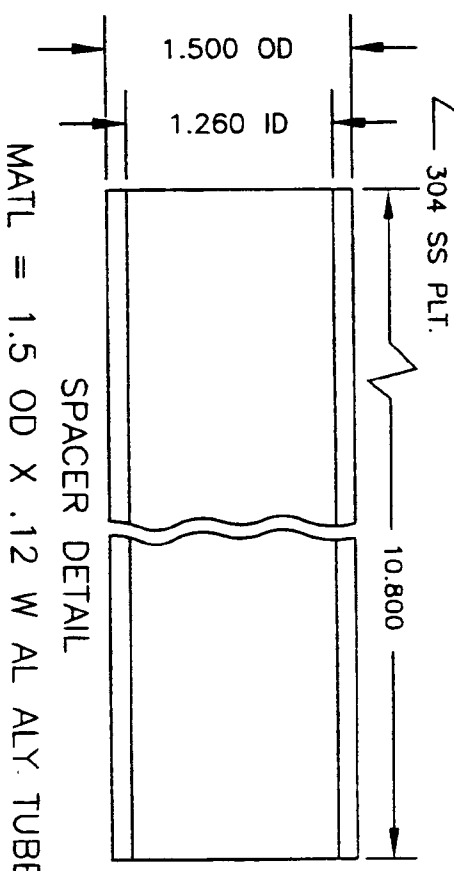
(DATE)

Revision 1 - issued to update to the 1985 regulations, to update the drawings,
and to extend the expiration date.



NOTES:

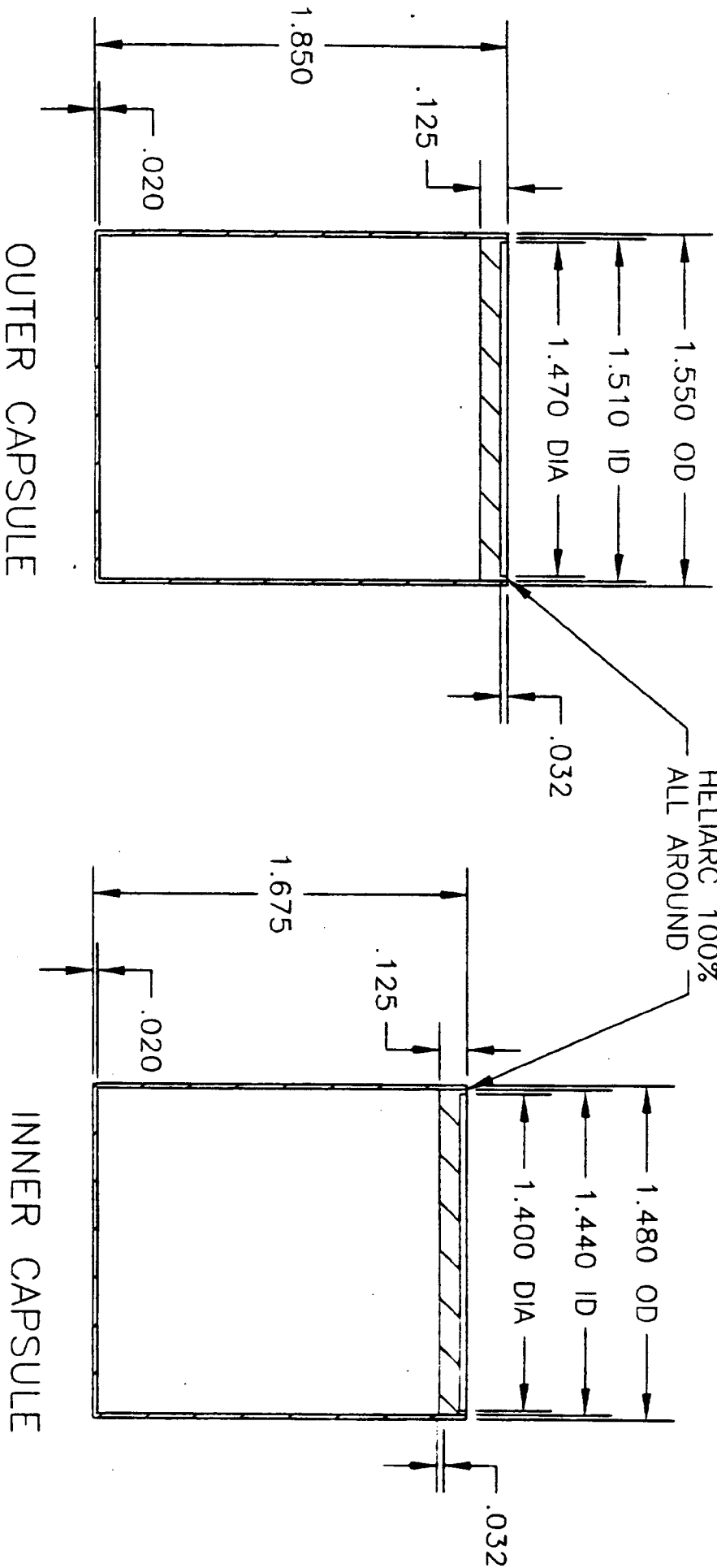
1. BOTH ENDCAPS TO HAVE .006 REGISTER & HAVE .0005 INTERFERENCE FIT.
2. THREADED END CAP TO BE WELDED PRIOR TO LOADING & BE HELIUM LEAK TESTED TO SENSITIVITY OF 1×10^7 CC/Min.
3. LOCK PIN HOLE TO BE MATCH DRILLED WITH TUNGSTEN SOURCE HOLDER
4. COMPLETED CAPSULE TO HAVE 5×10 mci CONTAMINATION.
5. COMPLETED CAPSULE MUST PASS HELIUM LEAK TEST OR LIQUID N_2 BUBBLE TEST.
6. CAPSULE TO BE CERTIFIED "SPECIAL FORM"



REV. (A) 8-06-98 DWG. NUMBER CORRECTION


J. L. SHEPHERD and Associates

DRAWN BY	DATE	APPROVED BY	SCALE
D. TRAN	10-7-92	<i>[Signature]</i>	NONE
TYPE 6810-190-10 TRIPLE SOURCE			
Cs-137 CAPSULE TYPE 6810-2000 Ci		A-0068-190-10	



NOTED:

1. MATL 316L S.S.
2. PLUGS .0005 INTERFERENCE FIT.
3. REMOVEABLE CONTAMINATION $\leq 5 \times 10^{-4}$ mCi
4. INNER & OUTER MUST PASS BUBBLE TEST & HELIUM LEAKS TEST AFTER FABRICATION
5. CHEMICAL FORM OF CS-137 IS CsCi SPECIFICATION ≥ 12 Ci/gm WT CsCi < 100g

J. L. SHEPHERD <i>and Associates</i>				
DRAWN BY	DATE	APPROVED BY		SCALE
D. TRAN	10-7-92	 J.		NONE
TYPE 6810-190 CAPSULES				
			A-006R-190	